

REMARKS

Reconsideration and allowance of this application are respectfully requested. Claims 1-5 are canceled, and claims 6-28 are submitted in place thereof for the Examiner's consideration.

The specification has been amended to correct minor errors.

Claims 6-28 have been provided in place of claims 1-5 solely to provide claims that better conform with the requirements of U.S. practice.

In the Office Action, the Examiner objected to the title of the invention. The title has been amended to correct the informalities.

Claim 4 was rejected under 35 U.S.C. § 112, second paragraph. Claim 4 has been cancelled.

Turning now to the art rejections, the Examiner rejected claims 1 and 3 under 35 U.S.C. § 103(a) as being unpatentable over Shiozawa (U.S. Patent No. 4,269,494) in view of Ninomiya (U.S. Patent No. 5,287,286) and rejected claims 2 and 4-5 under 35 U.S.C. §103 (a) as being unpatentable over Shiozawa in view of Ninomiya and further in view of van Phuoc (U.S. Patent No. 5,633,573). Claims 1-5 are canceled, and claims 6-28 submitted in place thereof. It is submitted that claims 6-28 are patentably distinguishable over the references.

In a conventional apparatus in which a battery is used as a power source, a warning may be displayed in advance of the battery power level falling to a minimum operating voltage. The power level at which the warning is displayed is typically determined by measuring the terminal voltage of the battery. However, because the discharge characteristics of a given battery depend on the type and number of battery cells in the battery, the time remaining after the low battery warning is first displayed may vary based on the type of battery used.

Thus, a user cannot know the remaining operating time when the warning is displayed.

The present invention addresses this problem by obtaining a capacity value of the battery, setting a correction value based on whether the capacity value exceeds a predetermined value, correcting a low power warning voltage value using the correction value, and generating a warning signal when the battery voltage is less than or equal to the corrected low power warning voltage value.

The Shiozawa patent is directed to a power supply level warning device used in electronic systems that employ a battery. A first circuit determines whether the battery voltage level has dropped to a value somewhat above the lower operating limit and if so, outputs a weak battery warning. A second detecting circuit determines whether the battery voltage has dropped to the lower operating limit and if so, prohibits further operation of the electronic system. (See Figs. 1 and 2; Abstract; and col. 4, lines 26-48). The patent is not at all concerned with obtaining a capacity value of a battery, setting a correction value based on whether the capacity value exceeds a predetermined value, correcting a low power warning voltage value using the correction value, or generating a warning signal when a detected battery voltage is less than or equal to a corrected low power warning voltage value.

The Ninomiya patent describes a power source controller that detects a low battery voltage state of a battery based on the voltage, output current and voltage variation of the battery. The output current of the battery is determined, and a battery reference voltage corresponding to the detected current is obtained from a low battery detection table. The battery voltage is then read every second, and when the battery voltage decreases by 59 mV, a low battery correction value corresponding to the time required for this decrease is read

from another table. The low battery correction value is then added to the low battery reference voltage, and when the battery voltage is lower than the corrected low battery reference voltage, an indicator lamp or an alarm is activated. (See Figs. 3-4 and 6A-6B; col. 4, lines 1-39; and col. 5, lines 1-46). Thus, Ninomiya describes using a correction value that is based on *the time required for the battery voltage to decrease 59 mV*. The reference does not suggest obtaining a *capacity* value of a battery or suggest setting a correction value *based on whether the capacity value exceeds a predetermined value*.

The van Phuoc patent is concerned with a smart battery used to report information for power management and charge control specific to the battery's state of charge and chemistry. The reference does not remedy the deficiencies of the Shiozawa or Ninomiya patent.

Neither Shiozawa, Ninomiya, or van Phuoc suggests:

obtaining means for obtaining a capacity value of a battery that provides power to said video camera body

as called for in claim 6, and none of the references suggests:

setting means for setting a correction value based on whether the capacity value exceeds a predetermined value

as defined in claim 1.

It follows that neither Shiozawa, Ninomiya nor van Phuoc, whether taken alone or in combination, suggests the video camera body defined in claim 6, and claim 6 is patentably distinct and unobvious over the references.

Claims 7-16 depend from claim 6 and each further defines and limits the invention set out in the independent claims. It follows that each of claims 7-16 likewise defines a combination that is patentably distinguishable over the references.

Independent claim 17 is directed to a video system that includes a video camera body having limitations similar to those set out in claim 6. It follows that claim 17 is patentably distinct over Shiozawa, Ninomiya and van Phuoc at least for the same reasons.

Claims 18-19 depend from claim 17 and are similarly distinguishable over the references.

Independent claim 20 is directed to a method of detecting low battery power and includes limitations similar to those set out in claim 6. The claim is therefore likewise distinguishable over Shiozawa, Ninomiya and van Phuoc.

Claims 21-28 depend from claim 20 and are distinguishable over the references at least for the same reasons.

Accordingly, the withdrawal of the rejections under 35 U.S.C. § 103 is respectfully requested.

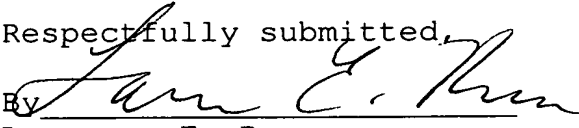
As it is believed that all of the rejections set forth in the Official Action have been fully met, favorable reconsideration and allowance are earnestly solicited. If, however, for any reason the Examiner does not believe that such action can be taken at this time, it is respectfully requested that the Examiner telephone applicant's attorney at (908) 654-5000 in order to overcome any additional objections which the Examiner might have.

If there are any additional charges in connection with this requested amendment, the Examiner is authorized to charge Deposit Account No. 12-1095 therefor.

Dated: January 6, 2004

Respectfully submitted,

By


Lawrence E. Russ

Registration No.: 35,342

LERNER, DAVID, LITTENBERG,

KRUMHOLZ & MENTLIK, LLP

600 South Avenue West

Westfield, New Jersey 07090

(908) 654-5000

Attorney for Applicant